Course Outline
GENA 1117A

Introduction

1–3. Course code, English title and Chinese title

Course Code:
GENA1117A

Title in English:
Service Learning – Integrating and Applying STEAM (Science, Technology, Engineering, Arts and Mathematics) Skills in the Community

Title in Chinese:
服務學習:在社區中結合和應用

4. Course description

Course Description:
The course focuses on "popular science" and aims to enhance students' understanding on STEAM education. Students taking this course will first learn popular-science explanation skills in lecture and participate in several relevant experiments devised by the instructors. Under the guidance of the instructors, they will then devise their own experiments in small groups for demonstration of basic scientific principles to primary students at the campus of collaborating primary school on designated dates. Understanding the situation of STEM education and enriching skills for presenting basic scientific principles to the general public are the major learning outcomes.
Service dates: 20/3, 21/3, 28/3 (each student has to attend at least 2 sessions)
Service location: Baptist (Sha Tin Wai) Lui Ming Choi Primary School

5. Learning outcomes

Learning outcomes:
By the end of the course, students will be able to:

- **Apply interdisciplinary knowledge and problem-solving skills**
- **Understand social issues and the needs of the society**
- **Strengthen ability to analyse the pros and cons of their work**
- **Develop skills to explain and demonstrate principles in simple ways**
- **Enhance their capacity to explain popular science in an interactive and attention-grabbing manner**
- **Accumulate experience in service learning**
- **Recognise the latest development in STEAM education in Hong Kong**

6. Course syllabus

Topic	Contents/fundamental concepts
Devising experiments for demonstration	1. Interactive and attention-grabbing level of demonstration 2. Ability to balance Fun and Safety.
Internal demonstration	1. Analysing the pros and cons of the demonstrations of different groups 2. Ability to improve their demonstration skills based on feedback from instructors and students
Service	1. Skills of explaining science principles to primary students 2. Interaction with juniors

7. Course components (Teaching modes and Learning activities)

Teaching Modes and Learning Activities
On-site face-to-face **(please specify if it is hybrid, i.e. some students will attend the activities elsewhere)**
Lectures
Interactive tutorial
Out-of-classroom
Service

8. Assessment type, percentage and rubrics

Assessment type	Percentage
Report	20%
Discussion (class participation and attendance of lectures)	15%
Participation (service experience and peer-evaluation)	35%
Presentation	30%

9. Required and recommended readings

Required readings (Service Learning):

- 黃玉(總校閱)(2013)。從服務中學習:跨領域服務——學習理論與實務(第二版)。台北:洪葉文化事業。
- Kaye, C. (2010). *The Complete Guide to Service Learning: Proven, Practical Ways to Engage Students in Civic Responsibility, Academic Curriculum, & Social Action* (Rev. & updated 2nd ed.). Minneapolis: Free Spirit Pub.
- Butin, D.W. (2010). *Service-learning in Theory and Practice: The Future of Community Engagement in Higher Education*. NY: Palgrave Macmillan. Chapter 1.
- Deeley, S.J. (2015). *Critical Perspectives on Service-Learning in Higher Education*, UK: Palgrave Macmillan.

Required readings (STEAM):

- Khine, M. S., & Areepattamannil, S. (2019). STEAM Education: Theory and Practice (M. S. Khine & S. Areepattamannil, Eds.; 1st ed. 2019.). Springer International Publishing.
- 黃珮欣(2016)。魚菜共生－STEM教學的應用與實踐。香港:新人才文化。

Recommended readings (if applicable)

- 嶺南大學服務研習處(2008)。服務學習計劃:嶺南模式。香港:嶺南大學服務研習處。
- 莉茲. 李. 海納克 (2018)。STEAM科學好好玩。台灣:小麥田。
- 瓊. 霍華斯、里奇. 卡梅隆(2019)。STEAM教育指南:青少年人工智慧時代成長攻略。中國:機械工業出版社。
- 港科院 (2016):《科學、科技和數學教育與香港創新科技的發展》, http://www.ashk.org.hk/extensions/fileman/Uploads/FULL_report_Chi_28_12.16%20v1.pdf
- 教育局 (2023a) :《於中小學推動STEAM教育》, 立法會CB(4)71/2023(03)號文件, https://www.legco.gov.hk/yr2023/chinese/panels/ed/papers/ed20230203cb4-71-3-c.pdf

10. Feedback for evaluation

Feedback for evaluation:
Early Feedback Collection System
Online course and teaching evaluation (OCTE)

11. Course schedule

Class/week	Date	Topic
1	9 January	Course Introduction
2	16 January	Grouping, instructors' demonstration for students' reference
3	23 January	Choosing topics and preliminary demonstrations
4	30 January	Demonstration of games: session 1
5	6 February	Demonstration of games: session 2 (scientific principles and operation)
6	13 February	Demonstration of games: session 3 (part 1) (interaction with primary students)
7	27 February	Demonstration of games: session 3 (part 2)(interaction with primary students)
8	13 March	Final rehearsal
9	20 March 14:00-18:30	First Service *(Erudite Government Primary School, 安博官立小學)*
10	26 March (Thu) 10:55-15:55	Second Service *(Alliance Primary School, Kowloon Tong, 九龍塘宣道小學)*
12	11 April (Sat) 08:00-12:30	Third Service *(Baptist (Sha Tin Wai) Lui Ming Choi Primary School, 浸信會沙田圍呂明才小學)*
12	17 April	Presentation

12. Contact details for teacher(s) or TA(s)

Key point: Help students to easily locate your contact information. The information allows students to arrange for any consultation after classes or receive support in terms of learning and teaching from teachers, tutors and/or teaching assistants. It is better to put both the teachers' and TAs' contact details such as name, office location, phone number and email address.

Instructor:	
Name:	Chung Chit Tik
Office Location:	Nil
Telephone:	90767434
Email:	chittikchung@cuhk.edu.hk
Teaching Venue:	Room 515, Lee Shau Kee Building
Website:	Nil

Instructor:	
Name:	Chow Cheuk Hei
Office Location:	Nil
Telephone:	90316099
Email:	TBC
Teaching Venue:	Room 515, Lee Shau Kee Building

13. Use of Artificial Intelligence (AI) tools in teaching, learning and assessments

Use of AI tools

(Teachers should include information relevant to the approach to be adopted in the course here)

Approach 1 - Prohibit all use of AI tools

14. Academic honesty and plagiarism

Academic honesty and plagiarism

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at http://www.cuhk.edu.hk/policy/academichonesty/.

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures.

- In the case of group projects, all members of the group should be asked to sign the declaration, each of whom is responsible and liable to disciplinary actions, irrespective of whether he/she has signed the declaration and whether he/she has contributed, directly or indirectly, to the problematic contents.
- For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading of the soft copy of the assignment.
- Students are fully aware that their work may be investigated by AI content detection software to determine originality.
- Students are fully aware of the AI approach(es) adopted in the course. In the case where some AI tools are allowed, students have made proper acknowledgment and citations as suggested by the course teacher.

Assignments without a properly signed declaration will not be graded by teachers.

Only the final version of the assignment should be submitted via VeriGuide.

The submission of a piece of work, or a part of a piece of work, for more than one purpose (e.g. to satisfy the requirements in two different courses) without declaration to this effect shall be regarded as having committed undeclared multiple submissions. It is common and acceptable to reuse a turn of phrase or a sentence or two from one's own work; but wholesale reuse is problematic. In any case, agreement from the course teacher(s) concerned should be obtained prior to the submission of the piece of work.

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